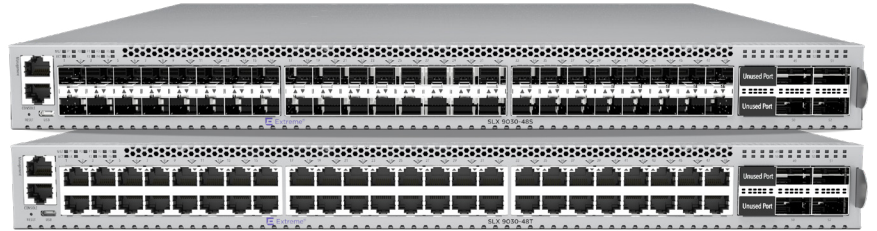


## Highlights

- Delivers agility at all layers of the data center stack
- Provides 1/10G (Copper or Fiber) server connectivity + 4 x 40/100GbE (25 via break-out) uplink options in a fixed 1U form factor
- Copper ports support 10G, 1G and 100 Meg speeds and Fiber supports 10G and 1G
- Full featured SLX operating system with advanced features supporting switching, IP Fabrics, BGP-EVPN and VXLAN
- Utilizes the SLX Visibility Services for flexible, real-time monitoring of virtualized, dynamic workloads to streamline troubleshooting
- All models offer a choice of AC/DC power supplies and F/R fans
- Incorporates turnkey and customizable cross-domain workflow automation for the entire network lifecycle through Extreme Workflow Composer and Extreme Workflow Composer Automation Suites



## ExtremeSwitching™ SLX 9030

High-performance 48-port 10GbE leaf switch.

### Next-Generation Leaf Switch

SLX 9030 switches are purpose-built high density 1/10/25/40/100GbE fixed form switches designed for the needs of large scale data centers and service providers. They deliver scalable L2 and L3 resources with advanced features for network monitoring and network virtualization offering scalable and deterministic network performance while simplifying deployment and reducing cost.

SLX 9030 switches enable organizations to design open networks that accommodate a variety of applications and east-west traffic patterns. With its high-density, scale-out architecture and leading power efficiency and airflow choices, the SLX 9030 delivers a cost-effective solution that optimizes power, cooling, and data center space. With a rich set of Layer 2 and Layer 3 features and advanced visibility and automation capabilities, the SLX 9030 is built to address dynamic growth in highly virtualized environments, distributed applications, and digital transformation. And with support for 100 Meg, 1/10/25/40/100GbE it offers a flexible choice of interface speed, providing high flexibility and the ability to seamlessly transition today's data centers to the next generation of network performance.

### Product Overview

The SLX 9030 is a fixed 1/10/25/40/100GbE top-of-rack leaf switch with 12 MB of packet buffer and an overall throughput of 1.76 Tbps in and out non-blocking switching capacity. It offers 48 1/10GbE SFP+ ports and 4 100/40GbE QSFP-28 ports.

SFP and QSFP ports offer a choice of speeds—including 100, 40, 25, 10, or 1GbE—along with a wide choice of transceivers and cables. Ports can be mixed, offering flexible design options to cost-effectively support demanding data center and cloud service provider environments.

# The SLX 9030 Switch Offers

## SLX 9030-48S

- 48 1/10GbE SFP+ ports
- 4 10/40/100GbE QSFP28 ports
- 25 GbE supported through break-outs

## SLX 9030-48T

- 48 100 Meg, 1/10GbE 10GBASE-T ports
- 4 10/40/100GbE QSFP28 ports
- 25 GbE supported through break-outs

## Ease of Use – Flexible Management Options

- Advanced command line interface
- Zero Touch Provisioning (ZTP+)
- Integrated web based management application

## Flexible System Configurations

- Wide range of port speeds
- Fiber SFP+ and copper 10GBASE-T models
- Hot-swappable modular power and fans
- AC and DC power supply options
- Front to Back and Back to Front air
- Flow options
- Redundancy options for high-availability

Together with IP fabrics, the SLX 9030 and SLX family of switches and routers help transform data center networks by enabling cloud-based architectures that deliver new levels of scale, agility, and operational efficiency. These highly automated, software-driven and programmable data center fabric design solutions support a wide range of network virtualization options and scale, supporting data center environments ranging from tens to thousands of servers. Moreover, they make it easy for organizations to architect, automate, and integrate current and future data center technologies while they transition to a cloud model on their own timeframe and terms.

The SLX 9030 helps address the increasing agility and analytics needs of digital businesses with innovative network automation and visibility capabilities provided by Extreme Workflow Composer.

## High Availability and Reliability

The SLX 9030 delivers the high performance and reliability required by modern data centers. It is designed for high availability from both a software and hardware perspective.

Key features include:

- A high-availability architecture with a clear separation between the control plane and data plane
- Redundant power supplies and fan modules that minimize single points of failure
- Active/Active Layer 2 multipathing
- 64-way ECMP routing for load balancing and redundancy
- BFD, OSPF3-NSR, and BGP4-GR

## Modular, Virtualized Operating System

The SLX 9030 runs Extreme SLX-OS, a Linux-based operating system that delivers process-level resiliency and fault isolation. SLX-OS supports advanced switching features and is highly programmable with support for REST API with the YANG data model, Python, and NETCONF—enabling full lifecycle automation with Extreme Workflow Composer. It is based on Ubuntu Linux, which offers all the advantages of open source and access to commonly used Linux tools.

## Embedded Network Visibility

SLX Visibility Services deliver a new approach to network monitoring and troubleshooting that makes it faster, easier, and more cost-effective to obtain the comprehensive, real-time visibility needed for network operations and automation. This innovative approach provides comprehensive visibility from the network to the workload, and triggers action on the network. These actions can address end-user application or service needs, and provide context-rich data for additional analysis, automation, and reporting. For details, read [Visibility in the Modern Data Center with Extreme Networks Switches and Routers](#).

## SLX Visibility Services

As network complexity increases, isolated data points at the physical or virtual network layer provide little insight into the criticality of an issue. For example, bursty storage backup traffic slowing down an internal website is a lower priority than a slowdown for a revenue-generating application. Network administrators need workload context across the network to ensure the appropriate action is taken in each case.

SLX Visibility Services help simplify network operations with embedded visibility from the physical network to application workloads. By combining

physical and virtual network traffic data with overlay and workload information across multiple network layers, this solution enables diverse, rule-based actions to maintain performance and mitigate risk.

Other key functions include:

- Pervasive visibility at scale across the network for seamless support of highly distributed multitier application workloads
- Rich multilayer classification (such as IP and MAC addresses, port numbers, VNIs) and workload matching with network-wide scale
- Automated application of rule-based actions (such as count, drop, mirror, sFlow) to incoming network traffic
- Further actions outside the switch, including pushing context-rich data to the Extreme Workflow Composer, and third-party analytics and monitoring applications

## VXLAN RIOT-Ready Hardware

The VXLAN routing into and out of tunnels (RIOT) capability enables intercommunication between data center workloads located across broadcast domains in different subnets. Many switching platforms require two or even three passes through the ASIC for RIOT functionality—either for route and encapsulation; route and decapsulation; or decapsulation, route, and encapsulation. They also tend to unnecessarily waste Ethernet ports for loopback. Ethernet LoopBack LAG (ELBL) is required for RIOT functionality, which reduces the number of available front panel ports on the switch, and each extra pass creates added latency to the RIOT function.

The SLX 9030 hardware supports RIOT, providing a flexible application deployment architecture for new and legacy multitier application workloads. With the SLX 9030, all RIOT functions—including decapsulation, route, and encapsulation—require only one pass through the ASIC. This maintains efficiency of front panel port availability and reduces latency for RIOT.

## Cross-Domain Automation for IT Operations

To unleash new levels of business innovation and competitive advantage, organizations are embracing digital transformation. Successful IT organizations are building agile business models founded on centralized, cross-domain automation. Extreme Workflow Composer is powered by StackStorm. With its nearly 2,000 pre-built points of integration, this DevOps-inspired, event-driven automation platform enables cross-domain workflows and

straightforward integration with disparate IT technologies, platforms, and policies to provide split-second, reliable execution of service provisioning and remediation. Extreme Workflow Composer Automation Suites are specifically designed to speed up time-to-value by providing complete network lifecycle automation. For more details, read the [Extreme Workflow Composer Automation Platform At-A-Glance](#).

## DevOps-Inspired Automation

Streamline end-to-end IT operations and increase IT agility with event-driven, cross-domain automation.

### SLX 9030 and Extreme Workflow Composer

SLX 9030, combined with Extreme Workflow Composer and Extreme Workflow Composer Automation Suites, delivers automation for provisioning, validation, troubleshooting, and remediation of network services:

- Unleash IT agility by eliminating cross-domain service provisioning, troubleshooting, and remediation delays
- Accelerate time-to-value and time-to-resolution with automation suites designed, built, and tested for Extreme Networks infrastructure; easily customized as skills and requirements change
- Leverage the power of DevOps methodologies and popular open source technologies that embrace industry best practices, as well as a thriving technical community for peer collaboration and innovation

Extreme Workflow Composer Automation Suites provide turnkey, customizable network automation for out-of-box functionality delivering immediate value to the business while the workflows provide automation for the entire lifecycle: provisioning, validation, troubleshooting, and remediation. With the Automation Suites, organizations can adopt automation at their own pace, deploy services, resolve issues faster and improve their IT agility. For details, read the [Extreme Workflow Composer Automation Suites At-A-Glance](#).

## SLX 9030 and Ansible

Ansible Network modules deliver the benefits of simple, powerful, agentless automation to network administrators. Ansible SLX network modules can be used to configure, test and validate existing network state on the SLX family of devices including 9030.

# Extreme Management Center for Insights, Visibility and Control

The SLX family of switches and routers, including SLX 9030 can be managed by Extreme Management Center (XMC). XMC includes a suite of applications, empowering administrators to deliver a superior quality experience to end users through a single pane of glass and a common set of tools to provision, manage and troubleshoot the network. It works across wired and wireless networks, from the edge to the data center and private cloud.

XMC provides a consolidated view of users, devices and applications for wired and wireless networks – from datacenter to edge. Zero touch provisioning lets one quickly bring new infrastructure online. A granular view of users, devices and applications with an easy to understand dashboard enables efficient inventory and network topology management.

XMC also provides ecosystem integration, includes off the box integrations with major enterprise data center virtual environments such as VMWare, OpenStack and Nutanix to provide VM visibility and enforce security settings.

Get more information on [Extreme Management Center](#).

## SLX 9030 Switch Specifications

| Model                | SLX 9030-48S  | SLX 9030-48T   |
|----------------------|---|--|
| Ports                | 48 1/10GbE SFP+ ports <ul style="list-style-type: none"> <li>• 4 10/40/100GbE QSFP28 ports</li> <li>• 1x Serial console port RJ-45</li> <li>• 1x 10/100/1000BASE-T out-of-band management port</li> <li>• Micro-USB Type A storage port</li> <li>• 25 GbE supported through break-outs</li> </ul> | 48 100 Meg, 1/10GbE 10GBaseT ports <ul style="list-style-type: none"> <li>• 4 10/40/100GbE QSFP28 ports</li> <li>• 1x Serial console port RJ-45</li> <li>• 1x 10/100/1000BASE-T out-of-band management port</li> <li>• Micro-USB Type A storage port</li> <li>• 25 GbE supported through break-outs</li> </ul> |
| Power Supplies       | Modular 770W AC power supply (up to two PSUs) <ul style="list-style-type: none"> <li>• Modular 1100W DC power supply (up to two PSUs)</li> <li>• Front-Back and Back-Front airflow options</li> </ul>   | Modular 770W AC power supply (up to two PSUs) <ul style="list-style-type: none"> <li>• Modular 1100W DC power supply (up to two PSUs)</li> <li>• Front-Back and Back-Front airflow options</li> </ul>  |
| Fan Modules          | 6 fan modules <ul style="list-style-type: none"> <li>• Front-Back and Back-Front airflow options</li> </ul>   | 6 fan modules <ul style="list-style-type: none"> <li>• Front-Back and Back-Front airflow options</li> </ul>  |
| Dimensions           | 17.4in W / 19.2in D / 1.7in H (44.1cm / 48.8cm / 4.3cm)   | 17.4in W / 19.2in D / 1.7in H (44.1cm / 48.8cm / 4.3cm)  |
| Performance          | Line rate 1.76Tbps Switching Capacity<br>Average Latency: 800 ns  | Line rate 1.76Tbps Switching Capacity<br>Average Latency: 800 ns   |
| CPU Memory           | 2.4GHz Quad core CPU <ul style="list-style-type: none"> <li>• 8GBE DDR3 ECC memory</li> <li>• 32GBE SSD memory</li> </ul>   | 2.4GHz Quad core CPU <ul style="list-style-type: none"> <li>• 8GBE DDR3 ECC memory</li> <li>• 32GBE SSD memory</li> </ul>  |
| Packet Buffers       | 12 MB   | 12MB   |
| Operating Conditions | 0° - 45°C operation <ul style="list-style-type: none"> <li>• 10% to 95% relative humidity, non-condensing</li> <li>• 0 - 3000 meters' altitude</li> <li>• Shock (half sine): 98 m/ s<sup>2</sup> (10 G), 11ms, 9 shocks</li> <li>• Random vibration: 3 to 500 Hz at 1.5 G rms</li> </ul>          | 0° - 45°C operation <ul style="list-style-type: none"> <li>• 10% to 95% relative humidity, non-condensing</li> <li>• 0 - 3000 meters' altitude</li> <li>• Shock (half sine): 98 m/ s<sup>2</sup> (10 G), 11ms, 9 shocks</li> <li>• Random vibration: 3 to 500 Hz at 1.5 G rms</li> </ul>                       |

## Power and Heat Dissipation

| Switch Model    | Minimum Heat Dissipation (BTU/hr) (Idle, no ports linked) | Minimum Power Consumption (Watts) (Idle, no ports linked) | Maximum Heat Dissipation (BTU/hr) (Fans high, all ports 100% traffic) | Maximum Power Consumption (Watts) (Fans high, all ports 100% traffic) |
|-----------------|---|---|---|---|
| SLX 9030-48S AC | 282 BTU/ hr   | 83 W  | 1124 BTU/ hr  | 329 W   |
| SLX 9030-48S DC | 311BTU/ hr  | 91W   | 1178 BTU/ hr  | 345 W   |
| SLX 9030-48T AC | 425 BTU/ hr   | 125 W   | 1271BTU/ hr   | 373 W   |
| SLX 9030-48T DC | 421BTU/ hr  | 123 W   | 1315 BTU/ hr  | 385 W   |
|                 | 1PSU  |   | 2 PSU   |   |

## Power Supply Specifications

|                       | 770W AC PSU<br>10960/10961                                   | 1100W DC PSU<br>10962/10963 |
|-----------------------|--|-----------------------------|
| Dimensions            | 2.3 in W x 1.6 in H x 14.1in<br>D (5.9 cm x 4.1cm x 35.9 cm) | 1100W DC PSU<br>10962/10963 |
| Weight                | 2.2 lb (1Kg)   | 2.2 lb (1Kg)                |
| Voltage Input Range   | 100 – 240 VAC +/- 10%  | 100 – 240 VAC +/- 10%       |
| Line Frequency Range  | 50 – 60 Hz +/- 5%  | N/A                         |
| PSU Input Socket      | IEC 320 C14  | Terminal Block              |
| Power Cord Input Plug | IEC 320 C13  | N/A                         |
| Operating Conditions  | 0° – 45°C Operation  | 0° – 45°C Operation         |

## Acoustic Specifications

| Switch Model                      | Bystander Sound Pressure  | Declared Sound Power  |
|-----------------------------------|---|---|
| SLX 9030-48S (Front-Back Airflow) | 55.4 dB(A) up to 30°C<br>61.3 dB(A) up to 40°C<br>76.8 dB(A) @ 45°C (max) | 6.9 bels up to 30°C<br>7.5 bels up to 40°C<br>9.0 bels @ 45°C (max) |
| SLX 9030-48S (Back-Front Airflow) | 56.9 dB(A) up to 30°C<br>63.3 dB(A) up to 40°C<br>77.4 dB(A) @ 45°C (max) | 7.1 bels up to 30°C<br>7.7 bels up to 40°C<br>9.1bels @ 45°C (max)  |
| SLX 9030-48T (Front-Back Airflow) | 58 dB(A) up to 25°C<br>72.8 dB(A) up to 35°C<br>76.3 dB(A) @ 45°C (max)   | 7.2 bels up to 25°C<br>8.7 bels up to 35°C<br>9.0 bels @ 45°C (max) |
| SLX 9030-48T (Back-Front Airflow) | 59.1dB(A) up to 25°C<br>72.5 dB(A) up to 35°C<br>77.5 dB(A) @ 45°C (max)  | 7.3 bels up to 25°C<br>8.7 bels up to 35°C<br>9.0 bels @ 45°C (max) |

## SLX 9030 Software Specifications

### Connector Options

- 10/1 GbE SFP+
- 40 GbE QSFP+
- 100 GbE QSFP-28
- Out-of-band Ethernet management: 10/100/1000 Mbps RJ-45
- Console management: RJ45 serial port and USB type-C port with serial communication device class support
- Storage: USB port, standard-A plug
- Maximum MAC addresses: Up to 80,000
- Maximum VLANs: 4,096
- Maximum ACLs : 2,048
- Maximum members in a standard LAG: 32
- Maximum per-port priority pause level: 8
- Maximum switches an mLAG can span: 2
- Maximum IPv4 unicast routes: 128,000
- Maximum IPv6 unicast routes: 15,000
- Maximum jumbo frame size: 9,126 bytes
- QoS priority queues (per port): 8

## IEEE Compliance

- IEEE 802.1D Spanning Tree Protocol
- IEEE 802.1s Multiple Spanning Tree
- IEEE 802.1w Rapid Reconfiguration of Spanning Tree Protocol
- IEEE 802.3 Ethernet
- IEEE 802.3ad Link Aggregation with LACP
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3z 1000BASE-X
- IEEE 802.3ba / 80 2.3bm 40 GBASE-X and 100 GBASE-X
- IEEE 802.1Q VLAN Tagging
- IEEE 802.1p Class of Service Prioritization and Tagging
- IEEE 802.1v VLAN Classification by Protocol and Port
- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
- IEEE 802.3x Flow Control (Pause Frames)
- IEEE 802.3ae 10 GBASE-X
- IEEE 802.3 10 GBASE-T (up to 100 m using Cat6a cabling or better)

# RFC Compliance

## General Protocols

- RFC 768 User Datagram Protocol (UDP)
- RFC 783 TFTP Protocol (revision 2)
- RFC 791 Internet Protocol (IP)
- RFC 792 Internet Control Message Protocol (ICMP)
- RFC 793 Transmission Control Protocol (TCP)
- RFC 826 ARP
- RFC 854 Telnet Protocol Specification
- RFC 894 A Standard for the Transmission of IP Datagram over Ethernet Networks
- RFC 959 FTP
- RFC 1027 Using ARP to Implement Transparent Subnet Gateways (Proxy ARP)
- RFC 1112 IGMP v1
- RFC 1157 Simple Network Management Protocol (SNMP) SNMP v1 and v2c
- RFC 1305 Network Time Protocol (NTP) Version 3
- RFC 1492 TACACS+
- RFC 1519 Classless Inter-Domain Routing (CIDR)
- RFC 1584 Multicast Extensions to OSPF
- RFC 1765 OSPF Database Overflow
- RFC 1812 Requirements for IP Version 4 Routers
- RFC 1997 BGP Communities Attribute
- RFC 1908 Coexistence between Version 1 and Version 2 of the Internet-standard Network Management Framework
- RFC 2068 HTTP Server
- RFC 2131 Dynamic Host Configuration Protocol (DHCP)
- RFC 2154 OSPF with Digital Signatures (Password, MD-5)
- RFC 2236 IGMP v2
- RFC 2267 Network Ingress Filtering Option—Partial Support
- RFC 2328 OSPF v2
- RFC 2370 OSPF Opaque Link-State Advertisement (LSA)
- RFC 2375 IPv6 Multicast Address Assignments
- RFC 2385 Protection of BGP Sessions with the TCP MD5 Signature Option
- RFC 2439 BGP Route Flap Damping
- RFC 2460 Internet Protocol, Version 6 (v6) Specification (on management interface)
- RFC 2462 IPv6 Stateless Address Auto-Configuration
- RFC 2464 Transmission of IPv6 Packets over Ethernet Networks (on management interface)
- RFC 2474 Definition of the Differentiated Services Field in the IPv4 and IPv6 Headers
- RFC 2571 An Architecture for Describing SNMP Management Frameworks
- RFC 2545 Use of BGP-MP Extensions for IPv6
- RFC 2578 Structure of Management Information Version 2
- RFC 2579 Textual Conventions for SMIv2
- RFC 2580 Conformance Statements for SMIv2
- RFC 2710 Multicast Listener Discovery (MLD) for IPv6
- RFC 2711 IPv6 Router Alert Option
- RFC 2740 OSPFv3 for IPv6
- RFC 2865 Remote Authentication Dial-In User Service (RADIUS)
- RFC 3101 The OSPF Not-So-Stubby Area (NSSA) Option
- RFC 3137 OSPF Stub Router Advertisement
- RFC 3176 sFlow
- RFC 3392 Capabilities Advertisement with BGPv4
- RFC 3410 Introduction and Applicability Statements for Internet Standard Management Framework
- RFC 3411 An Architecture for Describing SNMP Frameworks
- RFC 3412 Message Processing and Dispatching for the SNMP
- RFC 3413 Simple Network Management Protocol (SNMP) Applications
- RFC 3414 User-based Security Model
- RFC 3415 View-based Access Control Model
- RFC 3416 Version 2 of SNMP Protocol Operations
- RFC 3417 Transport Mappings
- RFC 3418 Management Information Base (MIB) for the SNMP
- RFC 3584 Coexistence between Version 1, Version 2, and Version 3 of the Internet-standard Network
- RFC 3587 IPv6 Global Unicast Address Format RFC 4291 IPv6 Addressing Architecture
- RFC 3623 Graceful OSPF Restart—IETF Tools
- RFC 3768 VRRP
- RFC 3826 The Advanced Encryption Standard (AES) Cipher Algorithm in the SNMP User-based Security Model
- RFC 4271 BGPv4

- RFC 4443 ICMPv6 (replaces 2463)
- RFC 4456 BGP Route Reflection
- RFC 4510 Lightweight Directory Access Protocol (LDAP): Technical Specification Road Map
- RFC 4724 Graceful Restart Mechanism for BGP
- RFC4750 OSPFv2.MIB
- RFC 4861 IPv6 Neighbor Discovery
- RFC 4893 BGP Support for Four-Octet AS Number Space
- RFC 5082 Generalized TTL Security Mechanism (GTSM)
- RFC 5880 Bidirectional Forwarding Detection (BFD)
- RFC 5881 Bidirectional Forwarding Detection (BFD) for IPv4 and IPv6 (Single Hop)
- RFC 5882 Generic Application of Bidirectional Forwarding Detection (BFD) RFC 5883 Bidirectional Forwarding Detection (BFD) for Multihop Paths
- RFC 5942 IPv6 Neighbor Discovery
- RFC 7348 Virtual eXtensible Local Area Network (VxLAN)
- RFC 7432 BGP-EVPN—Network Virtualization Using VXLAN Data Plane

## SSH/SCP/SFTP

- RFC 4250 Secure Shell (SSH) Protocol Assigned Numbers
- RFC 4251 Secure Shell (SSH) Protocol Architecture
- RFC 4252 Secure Shell (SSH) Authentication Protocol
- RFC 4253 Secure Shell (SSH) Transport Layer Protocol
- RFC 4254 Secure Shell (SSH) Connection Protocol
- RFC 4344 SSH Transport Layer Encryption Modes
- RFC 4419 Diffie-Hellman Group Exchange for the Secure Shell (SSH) Transport Layer Protocol

## MIBs

- RFC 2674 Bridge MIB
- RFC 2819 RMON Groups 1, 2, 3, 9
- RFC 2863 The Interfaces Group MIB
- RFC 3826 SNMP-USM-AES-MIB
- RFC 4022 TCP MIB
- RFC 4113 UDP.MIB

- RFC 4133 Entity MIB (Version 3); rmon.mib, rmon2.mib, sflow\_v5.mib, bridge.mib, pbridge.mib, qbridge.mib, rstp.mib, lag.mib, lldp.mib, lldp\_ext\_dot1.mib, lldp\_ext\_dot3.mib
- RFC 4273 BGP-4 MIB
- RFC 4292 IP Forwarding MIB
- RFC 4293 Management Information Base for the Internet Protocol (IP)
- RFC 4750 OSPFv2.MIB
- RFC 7331 BFD MIB

## Virtualization Support

- VXLAN Routing
- VXLAN Bridging
- VXLAN Tunnel End Point
- VXLAN Multi-VN

## Layer 2 Switching

- Conversational MAC Learning
- Virtual Link Aggregation Group (vLAG) spanning
- Layer 2 Access Control Lists (ACLs)
- Address Resolution Protocol (ARP) RFC 826
- Layer 2 Loop prevention in an overlay environment
- MLD Snooping
- IGMP v1/v2 Snooping
- MAC Learning and Aging
- Link Aggregation Control Protocol (LACP) IEEE 802.3ad/802.1AX
- Virtual Local Area Networks (VLANs)
- VLAN Encapsulation 802.1Q
- Per-VLAN Spanning Tree (PVST+/PVRST+)
- Rapid Spanning Tree Protocol (RSTP) 802.1w
- Multiple Spanning Tree Protocol (MSTP) 802.1s
- STP PortFast, BPDU Guard, BPDU Filter
- STP Root Guard
- Pause Frames 802.3x
- Static MAC Configuration
- Multi-Chassis Trunking (MCT)

## Layer 3 Routing

- Border Gateway Protocol (BGP4+)
- DHCP Helper
- Layer 3 ACLs
- IGMPv2
- OSPF v2/v3
- Static routes
- IPv4/v6 ACL
- Bidirectional Forwarding Detection (BFD)
- 64-Way ECMP
- VRF Lite
- VRF-aware OSPF, BGP, VRRP, static routes
- VRRP v2 and v3
- IPv4/IPv6 dual stack
- ICMPv6 Route-Advertisement Guard
- Route Policies
- IPv6 ACL packet filtering
- BGP Additional-Path
- BGP-Allow AS
- BGP Generalized TTL Security Mechanism (GTSM)
- BGP Peer Auto Shutdown
- IPv6 routing
- OSPF Type-3 LSA Filter
- Wire-speed routing for IPv4 and IPv6 using any routing protocol
- BGP-EVPN Control Plane Signaling RFC 7432
- BGP-EVPN VXLAN Standard-based Overlay
- Multi-VRF
- IP Unnumbered Interface
- VRRP-E

## Automation and Programmability

- gRPC Streaming protocol and API
- REST API with YANG data model
- Python
- PyNOS libraries
- DHCP automatic provisioning
- NETCONF API

## High Availability

- BFD

## Quality of Service

- ACL-based QoS

- Two Lossless priority levels for QoS
- Class of Service (CoS) IEEE 802.1p
- DSCP Trust
- DSCP to Traffic Class Mutation
- DSCP to CoS Mutation
- DSCP to DSCP Mutation
- Random Early Discard
- Per-port QoS configuration
- ACL-based Rate Limit
- Dual-rate, three-color token bucket
- ACL-based remarking of CoS/DSCP/Precedence
- ACL-based sFlow
- Scheduling: Strict Priority (SP), Deficit Weighted Round-Robin (DWRR)

## Management and Monitoring

- Zero-Touch Provisioning (ZTP)
- IPv4/IPv6 management
- Industry-standard Command Line Interface (CLI)
- NETCONF API
- REST API with YANG data model
- SSH/SSHv2
- Link Layer Discovery Protocol (LLDP) IEEE 802.1AB
- MIB II RFC 1213 MIB
- Syslog (RASlog, AuditLog)
- Management VRF
- Switched Port Analyzer (SPAN)
- Telnet
- SNMP v1, v2C, v3
- sFlow version 5
- Out-of-band management
- RMON-1, RMON-2
- NTP
- Management Access Control Lists (ACLs)
- Role-Based Access Control (RBAC)
- Range CLI support
- Python
- DHCP Option 82 Insertion
- DHCP Relay
- Timestamping



## Security

- Port-based Network Access Control 802.1X
- RADIUS
- AAA
- TACACS+
- Secure Shell (SSHv2)
- TLS 1.1, 1.2
- HTTP/HTTPS
- BPDU Drop
- Lightweight Directory Access Protocol (LDAP)
- Secure Copy Protocol
- Control Plane Policing (CPP)
- LDAP/AD
- SFTP
- Port Security

## Ordering Information

| Part Number             | Description   |
|-------------------------|---|
| EN-SLX-9030-48S-4C-AC-F | Extreme SLX 9030-48S Switch AC with Front to Back Airflow, Supports 48x10GE/1GE + 4x100GE/40GE            |
| EN-SLX-9030-48S-4C-AC-R | Extreme SLX 9030-48S Switch AC with Back to Front Airflow, Supports 48x10GE/1GE + 4x100GE/40GE            |
| EN-SLX-9030-48S-4C      | Extreme SLX 9030-48S Switch with No Power supplies, no fans, Supports 48x10GE/1GE + 4x100GE/40GE          |
| EN-SLX-9030-48T-4C-AC-F | Extreme SLX 9030-48T 10GBaseT Switch AC with Front to Back Airflow, Supports 48x10GE/1GE + 4x100GE/40GE   |
| EN-SLX-9030-48T-4C-AC-R | Extreme SLX 9030-48T 10GBaseT Switch AC with Back to Front Airflow, Supports 48x10GE/1GE + 4x100GE/40GE   |
| EN-SLX-9030-48T-4C      | Extreme SLX 9030-48T 10GBaseT Switch with No Power supplies, no fans, Supports 48x10GE/1GE + 4x100GE/40GE |
| EN-SLX-9030-ADV-LIC-P   | SLX 9030 Advanced Feature License for BGP-EVPN, gRPC  |
| 17115                   | Fan module, Front to Back airflow   |
| 17116                   | Fan module, Back to Front airflow   |
| 10960                   | 770W AC power supply, Front -to-Back airflow  |
| 10961                   | 770W AC power supply, Back-to-Front airflow   |
| 10962                   | 1100W DC power supply, Front -to-Back airflow   |
| 10963                   | 1100W DC power supply, Back-to-Front airflow  |



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